

ABSTRACT OF THE INVENTION

In a system for cleaning a workpiece or wafer, a boundary layer of heated liquid is formed on the workpiece surface. Ozone is provided around the workpiece. The ozone diffuses through the boundary layer and chemically reacts with contaminants on the workpiece surface. Preferably, the liquid includes water, and may also include a chemical. Steam may also be used with the steam also physically removing contaminants, and also heating the workpiece to speed up chemical cleaning. Sonic or electromagnetic energy may also be introduced to the workpiece.